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   Ron, Eliora
   Orr, Elisha
   Paitan, Yossi

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<141> 2000-11-10

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Pro Phe Asp Leu Ala Cys Gly Pro Leu Ala Arg Leu His Leu Tyr Ser
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Arg Ser Glu His Glu His Val Leu Leu Leu Cys Phe His His Leu Val
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Leu Asp Gly Ala Ser Val Ala Pro Leu Leu Asp Ala Leu Arg Glu Arg
            100   105   110

Tyr Ala Gly Thr Glu Ala Lys Ala Gly Leu Leu Glu Val Pro Ile Val
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Ala Pro Tyr Arg Ala Ala Val Glu Trp Glu Gln Leu Ala Ile Gly Gly
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Asp Glu Gly Arg Arg His Leu Asp Tyr Trp Arg His Val Leu Ala Thr
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Pro Val Pro Pro Pro Leu Asn Leu Pro Thr Asp Arg Pro Arg Ser Ala
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Thr Gly Leu Asp Ser Glu Gly Ala Thr His Ser Gln Arg Val Pro Thr
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Glu Gln Ala Leu Arg Leu Arg Glu Phe Ala Arg Ala Gln Gln Val Ser
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Leu Pro Thr Val Leu Leu Gly Leu Tyr Tyr Ala Leu Leu His Arg His
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Thr Arg Gln Asp Asp Val Val Val Gly Ile Pro Thr Met Gly Arg Pro
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Arg Ala Glu Leu Ala Thr Ala Ile Gly Tyr Phe Val Asn Val Met Ala
245   250   255

Val Arg Ala Arg Gly Leu Gly Gln His Ser Phe Gly Ser Leu Leu Arg
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His Leu His Asp Ser Val Ile Asp Gly Leu Glu His Ala His Tyr Pro
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Phe Pro Arg Val Val Lys Asp Leu Arg Leu Ser Asn Gly Pro Glu Glu
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Ala Pro Gly Phe Gln Thr Met Phe Thr Phe Gln Ser Leu Gln Leu Thr
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Ser Ala Pro Pro Arg Pro Glu Pro Arg Ser Gly Gly Leu Pro Glu Leu
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Glu Pro Leu Asp Cys Val His Gln Glu Gly Ala Tyr Pro Leu Glu Leu
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Glu Val Val Glu Gly Ala Lys Gly Leu Thr Leu His Phe Lys Tyr Asp
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Ala Arg Leu Tyr Glu Ala Asp Thr Val Glu Arg Met Ala Arg Gln Leu
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Leu Arg Ala Ala Asp Gln Val Ala Asp Gly Val Glu Ser Pro Leu Ser
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Ala Leu Ser Trp Leu Asp Asp Glu Glu Arg Arg Thr Leu Leu Arg Asp
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Trp Asn Ala Thr Ala Thr Pro Phe Leu Glu Asp Leu Gly Val His Glu
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Leu Phe Gln Arg Gln Ala Arg Glu Thr Pro Asp Ala Met Ala Val Ser
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Tyr Glu Gly His Ser Leu Ser Tyr Gln Ala Leu Asp Thr Arg Ser Arg
450   455   460

Glu Ile Ala Ala His Leu Lys Ser Phe Gly Val Lys Pro Gly Ala Leu
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Val Gly Ile Tyr Leu Asp Arg Ser Ala Glu Leu Val Ala Ala Met Leu
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Gly Val Leu Ser Ala Gly Ala Ala Tyr Val Pro Leu Asp Pro Val His
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Pro Glu Asp Arg Leu Arg Tyr Met Leu Glu Asp Ser Gly Val Val Val
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Val Leu Ala Arg Gln Ala Ser Arg Asp Lys Val Ala Ala Ile Ala Gly
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Ala Ser Cys Lys Val Cys Val Leu Glu Asp Val Lys Ala Gly Ala Thr
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Ser Ala Pro Ala Gly Thr Ser Pro Asn Gly Leu Ala Tyr Val Ile Tyr
              565   570   575

Thr Ser Gly Ser Thr Gly Arg Pro Lys Gly Val Met Ile Pro His Arg
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Gly Val Val Asn Phe Leu Leu Cys Met Arg Arg Thr Leu Gly Leu Lys
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Arg Thr Asp Ser Leu Leu Ala Val Thr Thr Tyr Cys Phe Asp Ile Ala
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Ala Leu Glu Leu Leu Leu Pro Leu Cys Ala Gly Ala Gln Val Ile Ile
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Ala Ser Ala Glu Thr Val Arg Asp Ala Gln Ala Leu Lys Arg Ala Leu
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Arg Thr His Arg Pro Thr Leu Met Gln Ala Thr Pro Ala Thr Trp Thr
              660   665   670

Leu Leu Phe Gln Ser Gly Trp Glu Asn Ala Glu Arg Val Arg Ile Leu
              675   680   685

Cys Gly Gly Glu Ala Leu Pro Glu Ser Leu Lys Ala His Phe Val Arg
              690   695   700

Thr Ala Ser Asp Val Trp Asn Met Phe Gly Pro Thr Glu Thr Thr Ile
705   710   715   720

Trp Ser Thr Met Ala Lys Val Ser Ala Ser Arg Pro Val Thr Ile Gly
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Lys Pro Ile Asp Asn Thr Gln Val Tyr Val Leu Asp Asp Arg Met Gln
         740   745   750

Pro Val Pro Ile Gly Val Pro Gly Glu Leu Trp Ile Ala Gly Ala Gly
         755   760   765

Val Ala Cys Gly Tyr Leu Asn Arg Pro Ala Leu Thr Ala Glu Arg Phe
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Val Ser Asn Pro Phe Thr Pro Gly Thr Thr Leu Tyr Arg Thr Gly Asp
785   790   795   800

Leu Ala Arg Trp Arg Ala Asp Gly Glu Val Glu Tyr Leu Gly Arg Leu
         805   810   815

Asp His Gln Val Lys Val Arg Gly Phe Arg Ile Glu Met Gly Glu Ile
         820   825   830

Glu Ala Gln Leu Ala Gly His Pro Ser Val Lys Asn Cys Ala Val Val
         835   840   845

Ala Lys Glu Leu Asn Gly Thr Ser Gln Leu Val Ala Tyr Cys Gln Pro
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Ala Gly Thr Ser Phe Asp Glu Glu Ala Ile Arg Ala His Leu Arg Lys
865   870   875   880

Phe Leu Pro Asp Tyr Met Val Pro Ala His Val Phe Ala Val Asp Ala
         885   890   895

Ile Pro Leu Ser Gly Asn Gly Lys Val Asp Arg Gly Gln Leu Met Ala
         900   905   910

Arg Pro Val Val Thr Arg Arg Lys Thr Ser Ala Val His Ala Arg Ser
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Pro Val Glu Ala Thr Leu Val Glu Leu Trp Lys Asn Val Leu Gln Val
    930   935   940

Asn Glu Val Gly Val Glu Asp Arg Phe Phe Glu Val Gly Gly Asp Ser
945   950   955   960

Val Leu Ala Ala Val Leu Val Glu Glu Met Asn Arg Arg Phe Asp Thr
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Arg Leu Ala Val Thr Asp Leu Phe Lys Tyr Val Asn Ile Arg Asp Met
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Ala Arg His Met Glu Gly Ala Thr Ala Gln Ala Arg Thr Gly Ala Thr
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Glu Pro Ala Arg Glu Asp Thr Ala Ser Glu Arg Asp Tyr Glu Gly Ser
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Leu Ala Val Ile Gly Ile Ser Cys Gln Leu Pro Gly Ala Ala Asp Pro
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Trp Arg Phe Trp Lys Asn Leu Arg Glu Gly Arg Asp Ser Val Val Ala
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Tyr Arg His Glu Glu Leu Arg Glu Leu Gly Val Pro Glu Glu Val Leu
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Arg Asp Ser Arg Tyr Val Ala Val Arg Ser Ser Ile Glu Asp Lys Glu
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Cys Phe Asp Pro His Phe Phe Gly Leu Thr Ala Arg Asp Ala Ser Phe
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Met Asp Pro Gln Phe Arg Leu Leu Leu Met His Ala Trp Lys Ala Val
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Glu Asp Ala Ala Thr Thr Pro Glu Arg Leu Gly Pro Cys Gly Val Phe
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Met Thr Ala Ser Asn Ser Phe Tyr His Gln Gly Ser Pro Gln Phe Pro
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Ala Asp Gly Gln Pro Val Leu Arg Thr Ala Glu Glu Tyr Val Leu Trp
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Val Leu Ala Gln Ala Gly Ser Ile Pro Thr Met Val Ser Tyr Lys Leu
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Gly Leu Lys Gly Pro Ser Leu Phe Val His Thr Asn Cys Ser Ser Ser
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Leu Ser Ala Leu Tyr Val Ala Gln Gln Ala Ile Ala Ala Gly Asp Cys
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Gln Thr Ala Leu Val Gly Ala Ala Thr Val Phe Pro Ser Ala Asn Leu
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Gly Tyr Leu His Gln Arg Gly Leu Asn Phe Ser Ser Ala Gly Arg Val
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Lys Ala Phe Asp Ala Ala Ala Asp Gly Met Ile Ala Gly Glu Gly Val
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Ala Val Leu Val Val Lys Asp Ala Ala Ala Ala Val Arg Asp Gly Asp
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Pro Ile Tyr Cys Leu Val Arg Lys Val Gly Ile Asn Asn Asp Gly Gln
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Asp Lys Val Gly Leu Tyr Ala Pro Ser Ala Thr Gly Gln Ala Glu Val
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Ile Arg Arg Leu Phe Asp Arg Thr Gly Ile Asp Pro Ala Ser Ile Gly
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Tyr Val Glu Ala His Gly Thr Gly Thr Leu Leu Gly Asp Pro Val Glu
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Val Ser Ala Leu Ser Glu Ala Phe Arg Thr Phe Thr Asp Arg Arg Gly
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Tyr Cys Arg Leu Gly Ser Val Lys Ser Asn Leu Gly His Leu Asp Thr
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Val Ala Gly Leu Ala Gly Leu Ile Lys Thr Ala Leu Ser Leu Arg Gln
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Gly Glu Val Pro Pro Thr Leu His Val Thr Gln Val Asn Pro Lys Leu
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Glu Leu Thr Asp Ser Pro Phe Val Ile Ala Asp Arg Leu Ala Pro Trp
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Pro Ser Leu Pro Gly Pro Arg Arg Ala Ala Val Ser Ala Phe Gly Leu
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Gly Gly Thr Asn Thr His Ala Ile Leu Glu His Tyr Pro Arg Asp Ser
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Arg Pro Arg Glu Arg Ser Gln Arg Ser Asn Ala Val Arg Ala Val Ala
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Pro Phe Ser Ala Arg Thr Leu Glu Ala Leu Lys Asp Asn Leu Arg Ala
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Leu Leu Asp Phe Leu Glu Asp Pro Ala Ser Ala Glu Val Ala Leu Ala
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Asp Ile Thr Tyr Thr Leu Gln Val Gly Arg Val Ala Met Pro Glu Arg
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Met Val Val Thr Ala Ser Thr Arg Asp Glu Leu Val Glu Gly Leu Arg
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Arg Gly Ile Ala Thr Val Gly Gly Ala His Val Gly Thr Val Val Asp
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Thr Ser Pro Ser Val Asp Ala Asp Ala Arg Ala Val Ala Glu Ala Trp
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Ala Thr Gly Asp Ser Ile Asp Trp Asp Ser Leu His Gly Asp Val Lys
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Pro Ala Arg Val Ser Leu Pro Thr Tyr Gln Phe Ala Lys Glu Arg Tyr
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Gly Leu Ser Pro Ala His Ser Val Ala Asn Ser Ser Lys Thr His Pro
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Asp Ala Gly Val Pro Leu Phe Val Pro Thr Trp Gln Pro Trp Ser Glu
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Gly Ala Ser Asn Ala Ser Leu Ala Leu Arg His Leu Val Val Leu Cys
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Glu Pro Leu Asp Ala Leu Gly Ala Glu Gly Ala Ser Ala Leu Ala Ser
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Thr Leu Ala Asp Arg Arg Ile Glu Val Val Arg Thr Ser Ser Pro Ser
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Ala Arg Leu Asp Ala Arg Phe Met Ala His Ala Ser Ala Val Phe Glu
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Arg Val Lys Ala Leu Leu Ser Glu Arg Leu Thr Ala Pro Val Thr Leu
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Gln Val Leu Val Pro Glu Glu Arg Asp Ala Leu Ala Leu Ser Gly Leu
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Gly Ser Leu Leu Arg Ser Val Ser Gln Glu Asn Pro Leu Val Arg Gly
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Val Leu Val Lys Ser Ala Arg Ala Gly Asp Val Thr Asp Ser Arg Tyr
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His Ala Gly Gln Leu Ser Arg Cys Glu Trp Arg Glu Ala Arg Val Ala
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Lys Gly Asp Ala Ser Arg Phe Trp Arg Glu Asp Gly Val Tyr Val Ile
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Ser Gly Gly Thr Gly Ala Leu Ala Arg Leu Phe Val Ala Glu Ile Gly
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Lys Arg Ala Thr Arg Ala Thr Val Ile Leu Val Ala Arg Ala Ser Ser
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Ala Glu Ala Val Asp Gly Gly Asn Gly Leu Arg Val Arg His Leu Pro
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Val Asp Val Thr Gln Pro Asn Asp Val Asn Ala Phe Val Ala Thr Val
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Leu Arg Glu His Gly Arg Ile Asp Gly Val Ile His Ala Ala Gly Ile
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Arg Arg Asp Asn Tyr Leu Leu Asn Lys Pro Val Ala Glu Met Gln Ala
1890   1895   1900

Val Leu Ala Pro Lys Val Val Gly Leu Val Asn Leu Asp His Ala Thr
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Arg Glu Leu Pro Leu Asp Phe Phe Val Thr Phe Ser Ser Leu Ala Ala
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Phe Gly Asn Ala Gly Gln Ser Asp Tyr Ala Ala Ala Asn Gly Phe Met
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Asp Gly Phe Ala Glu Ser Arg Ala Ala Leu Val Asn Ala Gly Gln Arg
1955   1960   1965

Gln Gly Arg Thr Val Ser Ile Arg Trp Pro Leu Trp Glu Asn Gly Gly
1970   1975   1980

Met Gln Leu Asp Ser Arg Ser Arg Glu Val Leu Met Gln Arg Thr Gly
1985   1990   1995   2000

Met Ala Ala Leu Gly Asp Glu Ala Gly Leu Gly Ala Phe Tyr Arg Ala
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Leu Glu Leu Gly Ser Pro Gly Val Ala Val Trp Thr Gly Glu Ala Gln
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Arg Phe Arg Glu Leu Ser Val Ser Val Ser Pro Ala Pro Pro Pro His
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Gln Val Ala Leu Asp Ala Val Val Ser Ile Thr Glu Lys Val Glu Thr
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Lys Leu Lys Ala Leu Phe Ser Glu Val Thr Arg Tyr Glu Glu Arg Arg
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Ile Asp Ala Arg Gln Pro Met Glu Arg Tyr Gly Ile Asp Ser Ile Ile
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Ile Thr Gln Met Asn Gln Ala Leu Glu Gly Pro Tyr Asn Ala Leu Ser
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Lys Thr Leu Phe Phe Glu Tyr Arg Thr Leu Ala Glu Val Ser Gly Tyr
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Leu Ala Glu His Arg Ala Glu Glu Ser Ala Lys Trp Val Ala Ala Pro
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Gly Glu Asn Ser Ser Ser Val Ile Gln Glu Ala Arg Pro Pro Arg Ala
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Asp Ala Thr His Arg Ala Pro Arg Ala Asp Glu Pro Ile Ala Val Ile
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Gly Met Ser Gly Arg Tyr Pro Gly Ala Glu Asn Leu Thr Glu Phe Trp
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Glu Arg Leu Ser Arg Gly Asp Asp Cys Ile Thr Glu Ile Pro Pro Glu
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Arg Trp Ser Leu Asp Gly Phe Phe Tyr Pro Asp Lys Lys His Ala Ala
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Ala Arg Gly Met Ser Tyr Ser Lys Trp Gly Gly Phe Leu Gly Gly Phe
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Ala Asp Phe Asp Pro Leu Phe Phe Asn Ile Ser Pro Arg Glu Ala Thr
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Ser Met Asp Pro Gln Glu Arg Leu Phe Leu Gln Ser Cys Trp Glu Val
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Leu Glu Asp Ala Gly Tyr Thr Arg Asp Ser Leu Ala Gln Arg Phe Gly
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Ser Ala Val Gly Val Phe Ala Gly Ile Thr Lys Thr Gly Tyr Glu Leu
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Tyr Gly Ala Glu Leu Glu Gly Arg Asp Ala Ser Val Arg Pro Tyr Thr
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Ser Phe Ala Ser Val Ala Asn Arg Val Ser Tyr Leu Leu Asp Leu Lys
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Gly Pro Ser Met Pro Val Asp Thr Met Cys Ser Ala Ser Leu Thr Ala
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Val His Met Ala Cys Glu Ala Leu Gln Arg Gly Ala Cys Val Met Ala
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<210> 3
<211> 785
<212> DNA
<213> Myxococcus xanthus

<400> 3
Met Lys Val Val Asn Lys Leu Leu Glu Lys Leu Pro Asp Val Val Ala
 1   5   10   15

Gly Lys Val Pro Asp Val Lys Leu Gln Asp Gln Asp Ile Lys Val Pro
            20   25   30

Leu Ala Gln Gly Thr Phe Thr Glu Glu Lys Ile Leu Pro Pro Lys Leu
        35   40   45

Ala Met His Gly Phe Thr Leu Ser Phe Glu Ala Thr Gly Glu Ala Ser
    50   55   60

Ile Arg Asn Phe Asn Ser Leu Gly Asp Val Asp Glu Asn Gly Ile Ile
65   70   75   80

Gly Glu Pro Ser Pro Glu Ser Ala Glu Pro Gly Pro Arg Pro Gln Leu
            85   90   95

Leu Leu Gly Ser Asp Ile Gly Trp Met Arg Tyr Gln Val Ser Ala Arg
            100   105   110

Val Lys Ala Ala Val Ser Ala Ser Leu Ser Phe Leu Ala Ser Glu Asn
        115   120   125

Gln Thr Glu Leu Ser Val Thr Leu Ser Asp Tyr Arg Ala His Pro Leu
    130   135   140

Gly Gln Asn Met Arg Glu Ala Val Arg Ser Asp Leu Ser Glu Leu Arg
145   150   155   160

Leu Met Gln Ala Thr Asp Leu Ala Lys Leu Thr Thr Gly Asp Ala Val
                165   170   175

Ala Trp His Val Arg Gly Ala Leu His Thr Arg Leu Glu Leu Asn Trp
            180   185   190

Ala Asp Ile Phe Pro Thr Asn Leu Asn Arg Leu Gly Phe Leu Arg Gly
        195   200   205

Asn Glu Leu Leu Ala Leu Lys Thr Ser Ala Lys Ala Gly Leu Ser Ala
210   215   220

Arg Val Ser Leu Thr Asp Asp Tyr Gln Leu Ser Phe Ser Arg Pro Arg
225   230   235   240

Ala Gly Arg Ile Gln Val Ala Val Arg Lys Val Lys Ser His Glu Gln
               245   250   255

Ala Leu Ser Ala Gly Leu Gly Ile Thr Val Glu Leu Leu Asp Pro Ala
            260   265   270

Thr Val Lys Ala Gln Leu Gly Gln Leu Leu Glu Ala Leu Leu Gly Pro
        275   280   285

Val Leu Arg Asp Leu Val Lys Lys Gly Thr Thr Ala Val Glu Ile Met
    290   295   300

Asp Gly Leu Val Asp Lys Ala Ser Lys Ala Lys Leu Asp Asp Asn Gln
305   310   315   320

Lys Lys Val Leu Gly Leu Val Leu Glu Arg Leu Gly Ile Asp Pro Gln
            325   330   335

Leu Ala Asp Pro Ala Asn Leu Pro Gln Ala Trp Ala Asp Phe Lys Ala
            340   345   350

Arg Val Ala Glu Ser Leu Glu Asn Ala Val Arg Thr Gln Val Ala Glu
        355   360   365

Gly Phe Glu Tyr Glu Tyr Leu Arg Leu Ser Glu Thr Ser Thr Leu Leu
    370   375   380

Glu Val Val Val Glu Asp Val Thr Ala Met Arg Phe His Glu Ser Leu
385   390   395   400

Leu Lys Gly Asn Leu Val Glu Leu Leu Lys Trp Met Lys Ser Leu Pro
            405   410   415

Ala Gln Gln Ser Glu Phe Glu Leu Arg Asn Tyr Leu His Ala Thr Thr
            420   425   430

Leu Thr Arg Gln Gln Ala Ile Gly Phe Ser Leu Gly Leu Gly Ser Phe
        435   440   445

Glu Leu Leu Lys Ala Lys Asn Val Ser Lys Gln Ser Trp Val Thr Gln
    450   455   460

Glu Asn Phe Gln Gly Ala Arg Arg Met Ala Phe Leu Gly Arg Arg Gly
465   470   475   480

Tyr Glu Asp Lys Leu Leu Gly Thr Arg Gly Gln Trp Val Val Asp Leu
            485   490   495

Lys Ala Asp Met Thr Arg Phe Ser Pro Thr Pro Val Ala Ser Asp Phe
       500   505   510

Gly Tyr Gly Leu His Leu Met Leu Trp Gly Arg Gln Lys Lys Leu Ser
     515   520   525

Arg Lys Asp Leu Gln Gln Ala Val Asp Asp Ala Val Val Trp Gly Val
    530   535   540

Leu Asp Ala Lys Asp Ala Ala Thr Val Ile Ser Thr Met Gln Glu Asp
545   550   555   560

Met Gly Lys His Pro Ile Glu Thr Arg Leu Glu Leu Lys Met Ala Asp
       565   570   575

Asp Ser Phe Arg Ala Leu Val Pro Arg Ile Gln Thr Leu Glu Leu Ser
     580   585   590

Arg Phe Ser Arg Ala Leu Ala Arg Ala Leu Pro Trp Ser Glu Gln Leu
    595   600   605

Pro Arg Ala Ser Ala Glu Phe Arg Arg Ala Val Tyr Ala Pro Ile Trp
    610   615   620

Glu Ala Tyr Leu Arg Glu Val Gln Glu Gln Gly Ser Leu Met Leu Asn
625   630   635   640

Asp Leu Ser Pro Ser Arg Ala Ala Gln Ile Ala Lys Trp Tyr Phe Gln
     645   650   655

Lys Asp Pro Thr Val Arg Asp Leu Gly Lys Asp Leu Gln Leu Ile Glu
     660   665   670

Ser Glu Trp Arg Pro Gly Gly Gly Asn Phe Ser Phe Ala Glu Val Ile
     675   680   685

Ser Lys Asn Pro Asn Thr Leu Met Arg Cys Arg Asn Phe Val Ser Gly
     690   695   700

Met Val Arg Leu Arg Arg Ala Ile Asp Glu Arg Lys Ala Pro Asp Glu
705   710   715   720

Leu Arg Thr Val Phe Gly Glu Leu Glu Gly Met Trp Thr Thr Gly Phe
       725   730   735

His Leu Arg Ala Ala Gly Ser Leu Leu Ser Asp Leu Ala Gln Ser Thr
       740   745   750

Pro Leu Gly Leu Ala Gly Val Glu Arg Thr Leu Thr Val Arg Val Ala
     755   760   765

Asp Ser Glu Glu Gln Leu Val Phe Ser Thr Ala Arg Ser Thr Gly Ala
     770   775   780

Ala
785

<210> 4
<211> 529
<212> DNA
<213> Myxococcus xanthus

<400> 4
Met Pro Ser Gly Cys Tyr Gly Ala Ala Ser Ala Phe Val Leu Pro Pro
 1   5   10   15

Leu Pro Ala Met Pro Gln Ala Pro Ser Asp Val Ser Gln Val Leu Leu
            20   25   30

Pro Phe Gly Gly Leu Val Gly Arg Glu Val Asp Leu Asp Ala Phe Leu
            35   40   45

Gln Thr Leu Met Asp Arg Ile Ala Ile Thr Leu Gln Ala Asp Arg Gly
        50   55   60

Thr Leu Trp Leu Leu Asp Pro Ala Arg Arg Glu Leu Phe Ser Arg Ala
65   70   75   80

Ala His Leu Pro Glu Val Ser Gln Ile Arg Val Lys Leu Gly Gln Gly
                85   90   95

Val Ala Gly Thr Val Ala Lys Ala Gly His Ala Ile Asn Val Pro Asp
            100   105   110

Pro Arg Gly Glu Gln Arg Phe Phe Ala Asp Ile Asp Arg Met Thr Gly
            115   120   125

Tyr Arg Thr Thr Ser Leu Leu Ala Val Pro Leu Arg Asp Gly Asp Gly
    130   135   140

Ala Leu Tyr Gly Val Leu Gln Val Leu Asn Arg Arg Gly Glu Asp Arg
145   150   155   160

Phe Thr Asp Glu Asp Thr Gln Arg Leu Thr Ala Ile Ala Ser Gln Val
                165   170   175

Ser Thr Ala Leu Gln Ser Thr Ser Leu Tyr Gln Glu Leu Gln Arg Ala
            180   185   190

Lys Glu Gln Pro Gln Val Pro Val Gly Tyr Phe Phe Asn Arg Ile Ile
            195   200   205

Gly Glu Ser Pro Gln Leu Gln Ala Ile Tyr Arg Leu Val Arg Lys Ala
    210   215   220

Ala Pro Thr Asp Ala Thr Val Leu Leu Arg Gly Glu Ser Gly Ser Gly
225   230   235   240

Lys Glu Leu Phe Ala Arg Ala Val His Val Asn Gly Pro Arg Arg Asp
              245   250   255

Gln Pro Phe Ile Lys Val Asp Cys Ala Ala Leu Pro Ala Thr Leu Ile
          260   265   270

Glu Asn Glu Leu Phe Gly His Glu Arg Gly Ala Phe Thr Gly Ala Asp
          275   280   285

His Arg Val Pro Gly Lys Phe Glu Ala Ala Ser Gly Gly Thr Val Phe
          290   295   300

Ile Asp Glu Ile Gly Glu Leu Pro Leu Pro Val Gln Gly Lys Leu Leu
305   310   315   320

Arg Val Ile Gln Asp Arg Glu Phe Glu Arg Val Gly Gly Thr Gln Ala
              325   330   335

Val Lys Val Asp Val Arg Ile Val Ala Ala Thr His Arg Asp Leu Ala
          340   345   350

Arg Met Val Ala Glu Gly Arg Phe Arg Glu Asp Leu Tyr Tyr Arg Ile
          355   360   365

Lys Val Val Glu Val Val Leu Pro Pro Leu Arg Glu Arg Gly Ala Glu
          370   375   380

Asp Ile Glu Arg Leu Ala Arg His Phe Val Ala Ala Val Ala Arg Arg
385   390   395   400

His Arg Leu Thr Pro Pro Arg Leu Ser Ala Ala Ala Val Glu Arg Leu
              405   410   415

Lys Arg Tyr Arg Trp Pro Gly Asn Val Arg Glu Leu Glu Asn Cys Ile
          420   425   430

Glu Ser Ala Val Val Leu Cys Glu Gly Glu Ile Leu Glu Glu His Leu
          435   440   445

Pro Leu Pro Asp Val Asp Arg Ala Ala Leu Pro Pro Pro Ala Ala Ala
          450   455   460

Gln Gly Val Asn Ala Pro Thr Ala Pro Ala Pro Leu Asp Ala Gly Leu
465   470   475   480

Leu Pro Leu Ala Glu Val Glu Arg Arg His Ile Leu Arg Val Leu Asp
              485   490   495

Ala Val Lys Gly Asn Arg Thr Ala Ala Ala Arg Val Leu Ala Ile Gly
          500   505   510

Arg Asn Thr Leu Ala Arg Lys Leu Lys Glu Tyr Gly Leu Gly Asp Glu
          515   520   525

Pro

<210> 5
<211> 292
<212> DNA
<213> Myxococcus xanthus

<400> 5
Met Arg Ala Ser Gln Ala Glu Ala Pro His Ser Arg Arg Leu Thr Met
 1   5   10   15

Glu Val Arg Phe His Gly Val Arg Gly Ser Ile Ala Val Ser Gly Ser
            20   25   30

Arg Ile Gly Gly Asn Thr Ala Cys Val Glu Val Thr Ser Gln Gly His
        35   40   45

Arg Leu Ile Leu Asp Ala Gly Thr Gly Ile Arg Ala Leu Gly Glu Ile
        50   55   60

Met Met Arg Glu Gly Ala Pro Gln Glu Ala Thr Leu Phe Phe Ser His
65   70   75   80

Leu His Trp Asp His Val Gln Gly Phe Pro Phe Phe Thr Pro Ala Trp
                85   90   95

Leu Pro Thr Ser Glu Leu Thr Leu Tyr Gly Pro Gly Ala Asn Gly Ala
            100   105   110

Gln Ala Leu Gln Ser Glu Leu Ala Ala Gln Met Gln Pro Leu His Phe
        115   120   125

Pro Val Pro Leu Ser Thr Met Arg Ser Arg Met Asp Phe Arg Ser Ala
    130   135   140

Leu His Ala Arg Pro Val Glu Val Gly Pro Phe Arg Val Thr Pro Ile
145   150   155   160

Asp Val Pro His Pro Gln Gly Cys Leu Ala Tyr Arg Leu Glu Ala Asp
                165   170   175

Gly His Ser Phe Val Tyr Ala Thr Asp Val Glu Val Arg Val Gln Glu
                180   185   190

Leu Ala Pro Glu Val Gly Arg Leu Phe Glu Gly Ala Asp Val Leu Cys
            195   200   205

Leu Asp Ala Gln Tyr Thr Pro Asp Glu Tyr Glu Gly Arg Lys Gly Val
    210   215   220

Ala Lys Lys Gly Trp Gly His Ser Thr Met Met Asp Ala Ala Gly Val

225   230   235   240

Ala Gly Leu Val Gly Ala Arg Arg Leu Cys Leu Phe His His Asp Pro
           245   250   255

Ala His Gly Asp Asp Met Leu Glu Asp Met Ala Glu Gln Ala Arg Ala
           260   265   270

Leu Phe Pro Val Cys Glu Pro Ala Arg Glu Gly Gln Arg Leu Val Leu
           275   280   285

Gly Arg Ala Ala
      290

<210> 6
<211> 168
<212> DNA
<213> Myxococcus xanthus

<400> 6
Met Pro Gly Pro Arg Cys Ala Glu Asn Asp Trp Val Ala Leu Leu Val
  1   5   10   15

Arg Val Asn His Glu Lys Val Ala Ala Ala Gln Leu Gly Lys His Gly
           20   25   30

Tyr Glu Phe Phe Leu Pro Thr Tyr Thr Pro Pro Lys Ser Ser Gly Val
           35   40   45

Lys Ala Lys Leu Pro Leu Phe Pro Gly Tyr Leu Phe Cys Arg Tyr Gln
      50   55   60

Pro Leu Asn Pro Tyr Arg Ile Val Arg Ala Pro Gly Val Ile Arg Leu
65   70   75   80

Leu Gly Gly Asp Ala Gly Pro Glu Ala Val Pro Ala Gln Glu Leu Glu
                85   90   95

Ala Ile Arg Arg Val Ala Asp Ser Gly Val Ser Ser Asn Pro Cys Asp
           100   105   110

Tyr Leu Arg Val Gly Gln Arg Val Arg Ile Ile Glu Gly Pro Leu Thr
           115   120   125

Gly Leu Glu Gly Ser Leu Val Thr Ser Lys Ser Gln Leu Arg Phe Ile
           130   135   140

Val Ser Val Gly Leu Leu Gln Arg Ser Val Ser Val Glu Val Ser Ala
145   150   155   160

Glu Gln Leu Glu Pro Ile Thr Asp
                165

<210> 7
<211> 79
<212> DNA
<213> Myxococcus xanthus

<400> 7
Met Asp Lys Arg Ile Ile Phe Asp Ile Val Thr Ser Ser Val Arg Glu
1   5   10   15

Val Val Pro Glu Leu Glu Ser His Pro Phe Glu Pro Glu Asp Asp Leu
        20   25   30

Val Gly Leu Gly Ala Asn Ser Leu Asp Arg Ala Glu Ile Val Asn Leu
        35   40   45

Thr Leu Glu Lys Leu Ala Leu Asn Ile Pro Arg Val Glu Leu Ile Asp
        50   55   60

Ala Lys Thr Ile Gly Gly Leu Val Asp Val Leu His Ala Arg Leu
65   70   75

<210> 8
<211> 420
<212> DNA
<213> Myxococcus xanthus

<400> 8
Met Gly Pro Val Gly Ile Glu Ala Met Asn Ala Tyr Cys Gly Ile Ala
1   5   10   15

Arg Leu Asp Val Leu Gln Leu Ala Thr His Arg Gly Leu Asp Thr Ser
        20   25   30

Arg Phe Ala Asn Leu Leu Met Glu Glu Lys Thr Val Pro Leu Pro Tyr
        35   40   45

Glu Asp Pro Val Thr Tyr Gly Val Asn Ala Ala Arg Pro Ile Leu Asp
        50   55   60

Gln Leu Thr Ala Ala Glu Arg Asp Ser Ile Glu Leu Leu Val Ala Cys
65   70   75   80

Thr Glu Ser Ser Phe Asp Phe Gly Lys Ala Met Ser Thr Tyr Leu His
                85   90   95

Gln His Leu Gly Leu Ser Arg Asn Cys Arg Leu Ile Glu Leu Lys Ser
                100   105   110

Ala Cys Tyr Ser Gly Val Ala Gly Leu Gln Met Ala Val Asn Phe Ile
        115   120   125

Leu Ser Gly Val Ser Pro Gly Ala Lys Ala Leu Val Val Ala Ser Asp

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              130            135            140
Leu Ser Arg Phe Ser Ile Ala Glu Gly Gly Asp Ala Ser Thr Glu Asp
145            150            155            160

Trp Ser Phe Ala Glu Pro Ser Ser Gly Ala Gly Ala Val Ala Met Leu
              165            170            175

Val Ser Asp Thr Pro Arg Val Phe Arg Val Asp Val Gly Ala Asn Gly
              180            185            190

Tyr Tyr Gly Tyr Glu Val Met Asp Thr Cys Arg Pro Val Ala Asp Ser
              195            200            205

Glu Ala Gly Asp Ala Asp Leu Ser Leu Leu Ser Tyr Leu Asp Cys Cys
              210            215            220

Glu Asn Ala Phe Arg Glu Tyr Thr Arg Arg Val Pro Ala Ala Asn Tyr
225            230            235            240

Ala Glu Ser Phe Gly Tyr Leu Ala Phe His Thr Pro Phe Gly Gly Met
              245            250            255

Val Lys Gly Ala His Arg Thr Met Met Arg Lys Phe Ser Gly Lys Asn
              260            265            270

Arg Gly Asp Ile Glu Ala Asp Phe Gln Arg Arg Val Ala Pro Gly Leu
              275            280            285

Thr Tyr Cys Gln Arg Val Gly Asn Ile Met Gly Ala Thr Met Ala Leu
              290            295            300

Ser Leu Leu Gly Thr Ile Asp His Gly Asp Phe Ala Thr Ala Lys Arg
305            310            315            320

Ile Gly Cys Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe Phe Ser
              325            330            335

Gly Val Val Thr Glu Glu Gly Gln Gln Arg Gln Arg Ala Leu Gly Leu
              340            345            350

Gly Glu Ala Leu Gly Arg Arg Gln Gln Leu Ser Met Pro Asp Tyr Asp
              355            360            365

Ala Leu Leu Lys Gly Asn Gly Leu Val Arg Phe Gly Thr Arg Asn Ala
              370            375            380

Glu Leu Asp Phe Gly Val Val Gly Ser Ile Arg Pro Gly Gly Trp Gly
385            390            395            400

Arg Pro Leu Leu Phe Leu Ser Ala Ile Arg Asp Phe His Arg Asp Tyr
              405            410            415

Gln Trp Ile Ser
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<210> 9
<211> 325
<212> DNA
<213> Myxococcus xanthus

<400> 9
Met Ser Ser Val Ala Thr Ala Val Pro Leu Thr Ala Arg Asp Ser Ala
1   5   10   15

Val Ser Arg Arg Leu Arg Ile Thr Pro Ser Met Cys Gly Gln Thr Ser
            20   25   30

Leu Phe Ala Gly Gln Ile Gly Asp Trp Ala Trp Asp Thr Val Ser Arg
            35   40   45

Leu Cys Gly Thr Asp Val Leu Thr Ala Thr Asn Ala Ser Gly Ala Pro
        50   55   60

Thr Tyr Leu Ala Phe Tyr Tyr Phe Arg Ile Arg Gly Thr Pro Ala Leu
65   70   75   80

His Pro Gly Ala Leu Arg Phe Gly Asp Thr Leu Asp Val Thr Ser Lys
                85   90   95

Ala Tyr Asn Phe Gly Ser Glu Ser Val Leu Thr Val His Arg Ile Cys
            100   105   110

Lys Thr Ala Glu Gly Gly Ala Pro Glu Ala Asp Ala Phe Gly His Glu
        115   120   125

Glu Leu Tyr Glu Gln Pro Gln Pro Gly Arg Ile Tyr Ala Glu Thr Phe
        130   135   140

Asn Arg Trp Ile Thr Arg Ser Asp Gly Lys Ser Asn Glu Ser Leu Ile
145   150   155   160

Lys Ser Ser Pro Val Gly Phe Gln Tyr Ala His Leu Pro Leu Leu Pro
            165   170   175

Asp Glu Tyr Ser Pro Arg Arg Ala Tyr Gly Asp Ala Arg Ala Arg Gly
            180   185   190

Thr Phe His Asp Val Asp Ser Ala Glu Tyr Arg Leu Thr Val Asp Arg
            195   200   205

Phe Pro Leu Arg Tyr Ala Val Asp Val Ile Arg Asp Val Asn Gly Val
        210   215   220

Gly Leu Ile Tyr Phe Ala Ser Tyr Phe Ser Met Val Asp Trp Ala Ile
225   230   235   240

Trp Gln Leu Ala Arg His Gln Gly Arg Ser Glu Gln Ala Phe Leu Ser
            245   250   255

Arg Val Val Leu Asp Gln Gln Leu Cys Phe Leu Gly Asn Ala Ala Leu
            260   265   270

Asp Thr Thr Phe Asp Ile Asp Val Gln His Trp Glu Arg Val Gly Gly
            275   280   285

Gly Glu Glu Leu Phe Asn Val Lys Met Arg Glu Gly Ala Gln Gly Arg
        290   295   300

Asp Ile Ala Val Ala Thr Val Lys Val Arg Phe Asp Ala Ala Ser Glu
305   310   315   320

Gly Gly Arg Arg Gly
                325

<210> 10
<211> 83
<212> DNA
<213> Myxococcus xanthus

<400> 10
Met Thr Asp Glu Gln Ile Arg Gly Val Val His Gln Ser Ile Val Arg
  1   5   10   15

Val Leu Pro Arg Val Arg Ser Asn Glu Ile Ala Gly His Leu Asn Leu
            20   25   30

Arg Glu Leu Gly Ala Asp Ser Val Asp Arg Val Glu Ile Leu Thr Ser
        35   40   45

Ile Leu Asp Ser Leu Arg Leu Gln Lys Thr Pro Leu Ala Lys Phe Ala
    50   55   60

Asp Ile Arg Asn Ile Asp Ala Leu Val Ala Phe Leu Ala Gly Glu Val
65   70   75   80

Ala Gly Gly

<210> 11
<211> 374
<212> DNA
<213> Myxococcus xanthus

<400> 11
Met Met Gln Glu Arg Gly Val Ala Leu Pro Phe Glu Asp Pro Val Thr
  1   5   10   15

Asn Ala Val Asn Ala Ala Arg Pro Ile Leu Asp Ala Met Ser Pro Glu

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                20              25              30

Ala Arg Glu Arg Ile Glu Leu Leu Val Thr Ser Ser Glu Ser Gly Val
         35              40              45

Asp Phe Ser Lys Ser Ile Ser Ser Tyr Ala His Glu His Leu Gly Leu
      50           55              60

Ser Arg His Cys Arg Phe Leu Glu Val Lys Gln Ala Cys Tyr Ala Ala
65              70              75              80

Thr Gly Ala Leu Gln Leu Ala Leu Gly Tyr Ile Ala Ser Gly Val Ser
              85              90              95

Pro Gly Ala Lys Ala Leu Val Ile Ala Thr Asp Val Thr Leu Val Asp
            100             105             110

Glu Ser Gly Leu Tyr Ser Glu Pro Ala Met Gly Thr Gly Gly Val Ala
      115             120             125

Val Leu Leu Gly Asp Glu Pro Arg Val Met Lys Met Asp Leu Gly Ala
    130             135             140

Phe Gly Asn Tyr Ser Tyr Asp Val Phe Asp Thr Ala Arg Pro Ser Pro
145             150             155             160

Glu Ile Asp Ile Gly Asp Val Asp Arg Ser Leu Phe Thr Tyr Leu Asp
          165             170             175

Cys Leu Lys His Ser Phe Ala Ala Tyr Gly Arg Arg Val Asp Gly Val
          180             185             190

Asp Phe Val Ser Thr Phe Asp Tyr Leu Ala Met His Thr Pro Phe Ala
          195             200             205

Gly Leu Val Lys Ala Gly His Arg Lys Met Met Arg Glu Leu Thr Pro
    210             215             220

Cys Asp Val Asp Glu Ile Glu Ala Asp Phe Gly Arg Arg Val Lys Pro
225             230             235             240

Ser Leu Gln Tyr Pro Ser Leu Val Gly Asn Leu Cys Ser Gly Ser Val
          245             250             255

Tyr Leu Ser Leu Cys Ser Ile Ile Asp Thr Ile Lys Pro Glu Arg Ser
          260             265             270

Ala Arg Val Gly Met Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe
      275             280             285

Phe Ser Gly Val Ile Gly Pro Glu Ser Val Ser Ala Leu Ala Gly Leu
    290             295             300

Asp Ile Gly Gly His Leu Arg Gly Arg Arg Gln Leu Thr Phe Asp Gln
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Tyr Val Glu Leu Leu Lys Glu Asn Leu Arg Cys Leu Val Pro Thr Lys
     325   330   335

Asn Arg Asp Val Asp Val Glu Arg Tyr Leu Pro Leu Val Thr Arg Thr
    340   345   350

Ala Ser Arg Pro Arg Met Leu Ala Leu Arg Arg Val Val Asp Tyr His
   355   360   365

Arg Gln Tyr Glu Trp Val
   370

<210> 12
<211> 171
<212> DNA
<213> Myxococcus xanthus

<400> 12
Met Asn Thr Pro Ser Leu Thr Asn Trp Pro Ala Arg Leu Gly Tyr Leu
1   5   10   15

Leu Ala Val Gly Gly Ala Trp Phe Ala Ala Asp Gln Val Thr Lys Gln
    20   25   30

Met Ala Arg Asp Gly Ala Lys Arg Pro Val Ala Val Phe Asp Ser Trp
    35   40   45

Trp His Phe His Tyr Val Glu Asn Arg Ala Gly Ala Phe Gly Leu Phe
   50   55   60

Ser Ser Phe Gly Glu Glu Trp Arg Met Pro Phe Phe Tyr Val Val Gly
65   70   75   80

Ala Ile Cys Ile Val Leu Leu Ile Gly Tyr Tyr Phe Tyr Thr Pro Pro
    85   90   95

Thr Met Lys Leu Gln Arg Trp Ser Leu Ala Thr Met Ile Gly Gly Ala
    100   105   110

Leu Gly Asn Tyr Val Asp Arg Val Arg Leu Arg Tyr Val Val Asp Phe
   115   120   125

Val Ser Trp His Val Gly Asp Arg Phe Tyr Trp Pro Ser Phe Asn Ile
   130   135   140

Ala Asp Thr Ala Val Val Val Gly Ala Ala Leu Met Ile Leu Glu Ser
145   150   155   160

Phe Arg Glu Pro Arg Gln Gln Leu Ser Pro Gly
    165   170

<210> 13
<211> 475
<212> DNA
<213> Myxococcus xanthus

<400> 13
Met Gly Thr Ser Glu Pro Val Glu Pro Asp His Ala Leu Ser Lys Pro
1   5   10   15

Pro Pro Val Ala Pro Val Gly Ala Gln Ala Leu Pro Arg Gly Pro Ala
            20   25   30

Met Pro Gly Ile Ala Gln Leu Met Met Leu Phe Leu Arg Pro Thr Glu
            35   40   45

Phe Leu Asp Arg Cys Ala Ala Arg Tyr Gly Asp Thr Phe Thr Leu Lys
        50   55   60

Ile Pro Gly Thr Pro Pro Phe Ile Gln Thr Ser Asp Pro Ala Leu Ile
65   70   75   80

Glu Val Ile Phe Lys Gly Asp Pro Asp Leu Phe Leu Gly Gly Lys Ala
            85   90   95

Asn Asn Gly Leu Lys Pro Val Val Gly Glu Asn Ser Leu Leu Val Leu
            100   105   110

Asp Gly Lys Arg His Arg Arg Asp Arg Lys Leu Ile Met Pro Thr Phe
            115   120   125

Leu Gly Glu Arg Met His Ala Tyr Gly Ser Val Ile Arg Asp Ile Val
    130   135   140

Asn Ala Ala Leu Asp Arg Trp Pro Val Gly Lys Pro Phe Ala Val His
145   150   155   160

Glu Glu Thr Gln Gln Ile Met Leu Glu Val Ile Leu Arg Val Ile Phe
            165   170   175

Gly Leu Glu Asp Ala Arg Thr Ile Ala Gln Phe Arg His His Val His
        180   185   190

Gln Val Leu Lys Leu Ala Leu Phe Leu Phe Pro Asn Gly Glu Gly Lys
        195   200   205

Pro Ala Ala Glu Gly Phe Ala Arg Ala Val Gly Lys Ala Phe Pro Ser
    210   215   220

Leu Asp Val Phe Ala Ser Leu Lys Ala Ile Asp Asp Ile Ile Tyr Gln
225   230   235   240

Glu Ile Gln Asp Arg Arg Ser Gln Asp Ile Ser Gly Arg Gln Asp Val
        245   250   255

Leu Ser Leu Met Met Gln Ser His Tyr Asp Asp Gly Ser Val Met Thr
       260   265   270

Pro Gln Glu Leu Arg Asp Glu Leu Met Thr Leu Leu Met Ala Gly His
     275   280   285

Glu Thr Ser Ala Thr Ile Ala Ala Trp Cys Val Tyr His Leu Cys Arg
    290   295   300

His Pro Asp Ala Met Gly Lys Leu Arg Glu Glu Ile Ala Ala His Thr
305   310   315   320

Val Asp Gly Val Leu Pro Leu Ala Lys Ile Asn Glu Leu Lys Phe Leu
       325   330   335

Asp Ala Val Val Lys Glu Thr Met Arg Ile Thr Pro Val Phe Ser Leu
      340   345   350

Val Ala Arg Val Leu Lys Glu Pro Gln Thr Ile Gly Gly Thr Thr Tyr
     355   360   365

Pro Ala Asn Val Val Leu Ser Pro Asn Ile Tyr Gly Thr His His Arg
    370   375   380

Ala Asp Leu Trp Gly Asp Pro Lys Val Phe Arg Pro Glu Arg Phe Leu
385   390   395   400

Glu Glu Arg Val Asn Pro Phe His Tyr Phe Pro Phe Gly Gly Gly Ile
      405   410   415

Arg Lys Cys Ile Gly Thr Ser Phe Ala Tyr Tyr Glu Met Lys Ile Phe
      420   425   430

Val Ser Glu Thr Val Arg Arg Met Arg Phe Asp Thr Arg Pro Gly Tyr
     435   440   445

His Ala Lys Val Val Arg Arg Ser Asn Thr Leu Ala Pro Ser Gln Gly
    450   455   460

Val Pro Ile Ile Val Glu Ser Arg Leu Pro Ser
465   470   475

<210> 14
<211> 318
<212> DNA
<213> Myxococcus xanthus

<400> 14
Met Val Asp Ser Val Ser Lys Gln Ala Arg Arg Lys Val Phe Leu Phe
  1   5   10   15

Ser Gly Gln Gly Thr Gln Ser Tyr Phe Met Ala Lys Glu Leu Phe Asp

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                20                    25                    30
Thr Gln Thr Gly Phe Lys Arg Gln Leu Leu Glu Leu Asp Glu Gln Phe
         35                    40                    45

Lys Gln Arg Leu Gly His Ser Ile Leu Glu Arg Ile Tyr Asp Ala Arg
      50                    55                    60

Ala Ala Arg Leu Asp Pro Leu Asp Asp Val Leu Val Ser Phe Pro Ala
65                    70                    75                    80

Ile Phe Met Ile Glu His Ala Leu Ala Arg Leu Leu Ile Asp Arg Gly
              85                    90                    95

Ile Gln Pro Asp Ala Val Val Gly Ala Ser Met Gly Glu Val Ala Ala
           100                   105                   110

Ala Ala Ile Ala Gly Ala Ile Ser Val Asp Ala Ala Val Ala Leu Val
      115                   120                   125

Ala Ala Gln Ala Gln Leu Phe Ala Arg Thr Ala Pro Arg Gly Gly Met
   130                   135                   140

Leu Ala Val Leu His Glu Leu Glu Ala Cys Arg Gly Phe Thr Ser Val
145                   150                   155                   160

Ala Arg Asp Gly Glu Val Ala Ala Ile Asn Tyr Pro Ser Asn Phe Val
           165                   170                   175

Leu Ala Ala Asp Glu Ala Gly Leu Gly Arg Ile Gln Gln Glu Leu Ser
           180                   185                   190

Gln Arg Ser Val Ala Phe His Arg Leu Pro Val Arg Tyr Pro Phe His
         195                   200                   205

Ser Ser His Leu Asp Pro Leu Arg Glu Glu Tyr Arg Ser Arg Val Arg
   210                   215                   220

Ala Asp Ser Leu Thr Trp Pro Arg Ile Pro Met Tyr Ser Cys Thr Thr
225                   230                   235                   240

Ala Asn Arg Val His Asp Leu Arg Ser Asp His Phe Trp Asn Val Val
           245                   250                   255

Arg Ala Pro Ile Gln Leu Tyr Asp Thr Val Leu Gln Leu Glu Gly Gln
           260                   265                   270

Gly Gly Cys Asp Phe Ile Asp Val Gly Pro Ala Ala Ser Phe Ala Thr
         275                   280                   285

Ile Ile Lys Arg Ile Leu Ala Arg Asp Ser Thr Ser Arg Leu Phe Pro
   290                   295                   300

Leu Leu Ser Pro Ser Pro Ala Ser Thr Gly Ser Ser Met Gly
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305   310   315

<210> 15
<211> 330
<212> DNA
<213> Myxococcus xanthus

<400> 15
Met Thr Glu Ala Pro Ala Pro Arg Ala Pro Ala Gln Val Pro Pro Pro
1   5   10   15

Pro Ser Ser Pro Trp Ala Leu His Thr Arg Gly Ala Ala Ser Ala Pro
        20   25   30

Val Asn Ala Arg Lys Ala Ala Leu Phe Pro Gly Gln Gly Ser Gln Glu
      35   40   45

Arg Gly Met Gly Ala Ala Leu Phe Asp Glu Phe Pro Asp Leu Thr Asp
  50   55   60

Ile Ala Asp Ala Ile Leu Gly Tyr Ser Ile Lys Arg Leu Cys Leu Glu
65   70   75   80

Asp Pro Gly Lys Glu Leu Ala Gln Thr Gln Phe Thr Gln Pro Ala Leu
      85   90   95

Tyr Val Val Asn Ala Leu Ser Tyr Leu Lys Arg Leu Arg Glu Gly Ala
      100   105   110

Glu Gln Pro Ala Phe Val Ala Gly His Ser Leu Gly Glu Tyr Asn Ala
    115   120   125

Leu Leu Val Ala Gly Ala Phe Asp Phe Glu Thr Gly Leu Arg Leu Val
  130   135   140

Lys Arg Arg Gly Glu Leu Met Ser Gly Ala Ser Gly Gly Thr Met Ala
145   150   155   160

Ala Val Val Gly Cys Asp Ala Val Ala Val Glu Gln Val Leu Arg Asp
      165   170   175

Arg Gln Leu Thr Ser Leu Asp Ile Ala Asn Ile Asn Ser Pro Asp Gln
      180   185   190

Ile Val Val Ser Gly Pro Ala Gln Asp Ile Glu Arg Ala Arg Gln Cys
      195   200   205

Phe Val Asp Arg Gly Ala Arg Tyr Val Pro Leu Asn Val Arg Ala Pro
  210   215   220

Phe His Ser Arg Tyr Met Gln Pro Ala Ala Ser Glu Phe Glu Arg Phe
225   230   235   240

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Leu Ser Gln Phe Gln Tyr Ala Pro Leu Arg Cys Val Val Ile Ser Asn
              245                 250                 255

Val Thr Gly Arg Pro Tyr Ala His Asp Asn Val Val Gln Gly Leu Ala
          260                 265                 270

Leu Gln Leu Arg Ser Pro Val Gln Trp Thr Ala Thr Val Arg Tyr Leu
        275                 280                 285

Leu Glu Gln Gly Val Glu Asp Phe Glu Glu Leu Gly Pro Gly Arg Val
      290                 295                 300

Leu Thr Arg Leu Ile Thr Ala Asn Lys Arg Gly Ala Pro Ala Pro Ala
305                 310                 315                 320

Thr Ala Ala Pro Ala Lys Trp Ala Asn Ala
                325                 330


<210> 16
<211> 417
<212> DNA
<213> Myxococcus xanthus

<400> 16
Met Ser Thr Ser Pro Val Gln Glu Leu Val Val Ser Gly Phe Gly Val
  1                 5                 10                  15

Thr Ser Ala Ile Gly Gln Gly Ala Ala Ser Phe Thr Ser Ala Leu Leu
            20                  25                  30

Glu Gly Ala Ala Arg Phe Arg Val Met Glu Arg Pro Gly Arg Gln His
          35                  40                  45

Gln Ala Asn Gly Gln Thr Thr Ala His Leu Gly Ala Glu Ile Ala Ser
      50                  55                  60

Leu Ala Val Pro Glu Gly Val Thr Pro Gln Leu Trp Arg Ser Ala Thr
65                  70                  75                  80

Phe Ser Gly Gln Ala Ala Leu Val Thr Val His Glu Ala Trp Asn Ala
            85                  90                  95

Ala Arg Leu Gln Ala Val Pro Gly His Arg Ile Gly Leu Val Val Gly
            100                 105                 110

Gly Thr Asn Val Gln Gln Arg Asp Leu Val Leu Met Gln Asp Ala Tyr
          115                 120                 125

Arg Glu Arg Val Pro Phe Leu Arg Ala Ala Tyr Gly Ser Thr Phe Met
      130                 135                 140

Asp Thr Asp Leu Val Gly Leu Cys Thr Gln Gln Phe Ala Ile His Gly
145                 150                 155                 160
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Met Ser Phe Thr Val Gly Gly Ala Ser Ala Ser Gly Leu Leu Ala Val
                165   170   175

Ile Gln Ala Ala Glu Ala Val Leu Ser Arg Lys Val Asp Val Cys Ile
            180   185   190

Ala Val Gly Ala Leu Met Asp Val Ser Tyr Trp Glu Cys Gln Gly Leu
            195   200   205

Arg Ala Met Gly Ala Met Gly Thr Asp Arg Phe Ala Arg Glu Pro Glu
            210   215   220

Arg Ala Cys Arg Pro Phe Asp Arg Glu Ser Asp Gly Phe Ile Phe Gly
225   230   235   240

Glu Ala Cys Gly Ala Val Val Val Glu Ser Ala Glu His Ala Arg Arg
                245   250   255

Arg Gly Val Thr Pro Arg Gly Ile Leu Ser Gly Trp Ala Met Gln Leu
            260   265   270

Asp Ala Ser Arg Gly Pro Leu Ser Ser Ile Glu Arg Glu Ser Gln Val
            275   280   285

Ile Gly Ala Ala Leu Arg His Ala Asp Leu Ala Pro Glu Arg Val Asp
            290   295   300

Tyr Val Asn Pro His Gly Ser Gly Ser Arg Gln Gly Asp Ala Ile Glu
305   310   315   320

Leu Gly Ala Leu Lys Ala Cys Gly Leu Thr His Ala Arg Val Asn Thr
                325   330   335

Thr Lys Ser Ile Thr Gly His Gly Leu Ser Ser Ala Gly Ala Val Gly
                340   345   350

Leu Ile Ala Thr Leu Val Gln Leu Glu Gln Gly Arg Leu His Pro Ser
                355   360   365

Leu Asn Leu Val Asp Pro Ile Asp Ser Ser Phe Arg Trp Val Gly Ala
            370   375   380

Thr Ala Glu Ala Gln Ser Leu Gln Asn Ala Leu Val Leu Ala Tyr Gly
385   390   395   400

Phe Gly Gly Ile Asn Thr Ala Val Ala Val Arg Arg Ser Ala Thr Glu
                405   410   415

Ser

<210> 17

<211> 262
<212> DNA
<213> Myxococcus xanthus

<400> 17
Met Gln Ala Ala Ser Pro Pro His Arg Asp Tyr Gln Thr Leu Arg Val
1   5   10   15

Arg Phe Glu Ala Gln Thr Cys Phe Leu Gln Leu His Arg Pro Asp Ala
            20   25   30

Asp Asn Thr Ile Ser Arg Thr Leu Ile Asp Glu Cys Gln Gln Val Leu
        35   40   45

Thr Leu Cys Glu Glu His Ala Thr Thr Val Val Leu Glu Gly Leu Pro
    50   55   60

His Val Phe Cys Met Gly Ala Asp Phe Arg Ala Ile His Asp Arg Val
65   70   75   80

Asp Asp Gly Arg Arg Glu Gln Gly Asn Ala Glu Gln Leu Tyr Arg Leu
            85   90   95

Trp Leu Gln Leu Ala Thr Gly Pro Tyr Val Thr Val Ala His Val Gln
            100   105   110

Gly Lys Ala Asn Ala Gly Gly Leu Gly Phe Val Ser Ala Cys Asp Ile
        115   120   125

Val Leu Ala Lys Ala Glu Val Gln Phe Ser Leu Ser Glu Leu Leu Phe
    130   135   140

Gly Leu Phe Pro Ala Cys Val Met Pro Phe Leu Ala Arg Arg Ile Gly
145   150   155   160

Ile Gln Arg Ala His Tyr Leu Thr Leu Met Thr Arg Pro Ile Asp Ala
            165   170   175

Ala Gln Ala Leu Ser Trp Gly Leu Ala Asp Ala Val Asp Ala Asp Ser
        180   185   190

Glu Lys Leu Leu Arg Leu His Leu Arg Arg Leu Arg Cys Leu Ser Lys
        195   200   205

Pro Ala Val Thr Gln Tyr Lys Lys Tyr Ala Ser Glu Leu Gly Gly Gln
    210   215   220

Leu Leu Ala Ala Met Pro Arg Ala Ile Ser Ala Asn Glu Ala Met Phe
225   230   235   240

Ser Asp Arg Ala Thr Leu Glu Ala Ile His Arg Tyr Val Glu Thr Gly
            245   250   255

Arg Leu Pro Trp Glu Ser

260

<210> 18
<211> 256
<212> DNA
<213> Myxococcus xanthus

<400> 18
Met Gly Ile Met Thr Glu Gly Thr Pro Met Ala Pro Val Val Thr Leu
1   5   10   15

His Glu Val Glu Glu Gly Val Ala Gln Ile Thr Leu Val Asp Arg Glu
            20   25   30

Asn Lys Asn Met Phe Ser Glu Gln Leu Val Arg Glu Leu Ile Thr Val
        35   40   45

Phe Gly Lys Val Asn Gly Asn Glu Arg Tyr Arg Ala Val Val Leu Thr
    50   55   60

Gly Tyr Asp Thr Tyr Phe Ala Leu Gly Gly Thr Lys Ala Gly Leu Leu
65   70   75   80

Ser Ile Cys Asp Gly Ile Gly Ser Phe Asn Val Thr Asn Phe Tyr Ser
            85   90   95

Leu Ala Leu Glu Cys Asp Ile Pro Val Ile Ser Ala Met Gln Gly His
        100   105   110

Gly Val Gly Gly Gly Phe Ala Met Gly Leu Phe Ala Asp Phe Val Val
    115   120   125

Leu Ser Arg Glu Ser Val Tyr Thr Thr Asn Phe Met Arg Tyr Gly Phe
    130   135   140

Thr Pro Gly Met Gly Ala Thr Tyr Ile Val Pro Lys Arg Leu Gly Tyr
145   150   155   160

Ser Leu Gly His Glu Leu Leu Leu Asn Ala Arg Asn Tyr Arg Gly Ala
            165   170   175

Asp Leu Glu Lys Arg Gly Val Pro Phe Pro Val Leu Pro Arg Lys Glu
            180   185   190

Val Leu Pro His Ala Tyr Glu Ile Ala Arg Asp Leu Ala Ala Lys Pro
        195   200   205

Arg Leu Ser Leu Val Thr Leu Lys Arg His Leu Val Arg Asp Ile Arg
    210   215   220

Arg Glu Leu Pro Asp Val Ile Glu Arg Glu Leu Glu Met His Gly Ile
225   230   235   240

Thr Phe His His Asp Asp Val Arg Arg Arg Ile Glu Gln Leu Phe Leu
                245   250   255

<210> 19
<211> 424
<212> DNA
<213> Myxococcus xanthus

<400> 19
Met Leu Asn Leu Ile Asn Asn His Ala His Gly Tyr Val Val Thr Pro
 1   5   10   15

Val Val Leu Ala Cys Asn Asp Ala Gly Leu Phe Glu Leu Leu Arg Gln
            20   25   30

Gly Pro Lys Asp Phe Asp Arg Leu Ala Glu Ala Leu Arg Ala Asn Arg
        35   40   45

Gly His Leu Arg Val Ala Met Arg Met Phe Glu Ser Leu Gly Trp Val
        50   55   60

Arg Arg Asp Ala Asp Asp Val Tyr Ala Val Thr Ala Ala Ala Ala Ala
65   70   75   80

His Arg Ser Phe Pro Arg Glu Ala Gln Ser Leu Phe Ala Leu Pro Met
            85   90   95

Asp Arg Tyr Leu Arg Gly Glu Asp Gly Leu Ser Leu Ala Pro Trp Phe
        100   105   110

Glu Arg Ser Arg Ala Ser Trp Asp Thr Asp Asp Thr Leu Val Arg Glu
        115   120   125

Leu Leu Asp Gly Ala Ile Ile Thr Pro Leu Met Leu Ala Leu Glu Gln
        130   135   140

Arg Gly Gly Leu Lys Glu Ala Arg Arg Leu Ser Asp Leu Trp Ser Gly
145   150   155   160

Gly Asp Gly Arg Asp Thr Cys Val Pro Glu Ala Val Gln His Glu Leu
            165   170   175

Ala Gly Phe Phe Ser Ala Gln Lys Trp Thr Arg Glu Asp Ala Val Asp
        180   185   190

Ala Glu Leu Thr Pro Lys Gly Ala Phe Ile Phe Glu Arg Ala Leu Leu
        195   200   205

Phe Ala Ile Val Gly Ser Tyr Arg Pro Met Leu Ala Ser Met Pro Gln
        210   215   220

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Leu Leu Phe Gly Asp Cys Asp Gln Val Phe Gly Arg Asp Glu Ala Gly
225                 230                 235                 240

His Glu Leu His Leu Asp Arg Thr Leu Asn Val Ile Gly Ser Gly His
                245                 250                 255

Gln His Arg Lys Tyr Phe Ala Glu Leu Glu Lys Leu Ile Ile Thr Val
                260                 265                 270

Phe Asp Ala Glu Asn Leu Ser Ala Gln Pro Arg Tyr Ile Ala Asp Met
                275                 280                 285

Gly Cys Gly Asp Gly Thr Leu Leu Lys Arg Val Tyr Glu Thr Val Leu
                290                 295                 300

Arg His Thr Arg Arg Gly Arg Ala Leu Asp Arg Phe Pro Leu Thr Leu
305                 310                 315                 320

Ile Ala Ala Asp Phe Asn Glu Lys Ala Leu Glu Ala Ala Gly Arg Thr
                325                 330                 335

Leu Ala Gly Leu Glu His Val Ala Leu Arg Ala Asp Val Ala Arg Pro
                340                 345                 350

Asp Arg Leu Ile Glu Asp Leu Arg Ala Arg Gly Leu Ala Glu Pro Glu
                355                 360                 365

Asn Thr Leu His Ile Arg Ser Phe Leu Asp His Asp Arg Pro Tyr Gln
                370                 375                 380

Pro Pro Ala Asp Arg Ala Gly Leu His Ala Arg Ile Pro Phe Asp Ser
385                 390                 395                 400

Val Phe Val Gly Lys Ala Gly Gln Glu Val Val Pro Ala Glu Val Phe
                405                 410                 415

His Ser Leu Val Glu His Leu Glu
                420
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<210> 20
<211> 19053
<212> DNA
<213> Myxococcus xanthus

<400> 20
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ggcgcgccgg gcctggcggc acttcgcggc ggccgggtgt ctgtccatgg ccgcggccgt 480

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gatgcgccgc caggcctcgc ggtccggcca ctgacgcccg ggccgctcgg gactcgctca 600

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cacggtgagg gtccgctcca cgccggcgag gcccagcggc gtggactgcg ccaggtccga 720

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